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SOCIAL CAPITAL LITERATURE AND DURLAUF´S CRITICISM

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SUMÁRIO

RESUMO

A literatura sobre a importância do "capital social" na economia foi alvo de severas críticas, notadamente devido à falta de uma definição sobre seu conceito. A indefinição sobre o mesmo é considerada um elemento que invalida trabalhos empíricos, especialmente os macroeconômicos, sobre o tema. Apesar das críticas, os trabalho na área continuaram. A literatura de crescimento econômico e capital social, em particular, caracterizou-se por uma maior desagregação espacial da análise, pela tentativa de discernir os elementos constituintes do capital social de forma empírica e pelo uso de teste de robustez. Iremos argumentar que esta aposta dos pesquisadores no tema foi frutífera e justificável do ponto de vista da "boa prática" do economista. O resultados da pesquisa permitiram a identificação de novos vínculos econômicos do capital social, estimularam a busca pelos seus determinantes e ainda permitem uma reflexão nova sobre o próprio conceito. Este episódio da história do pensamento é interessante para que os macroeconomistas repensem sua atuação.

Palavras-chave: capital social, metodologia econômica, crescimento econômico

ABSTRACT

Despite the lack of consensus on the appropriate concept of 'social capital', research in the area has continued even in the most criticized macroeconomic area. The investigation about the importance of social capital to generate differences in regional *per capita* income (*per capita* income growth rates) had new contributions in the last decade. Robustness analysis was carried on for cross-country analysis and interregional studies were explored. Empirical research was usually based on the idea that social capital is 'norms, networks and trust', although without a deep discussion about this choice. We will argue that the acceptance of this pragmatic concept was wise, not only because it allowed empirical research to follow one, but also because it is theoretically well established. We will also argue that the concern about robustness is one of the main ways ahead to the macro research, which was exactly the way followed by this literature. In other words, we will argue that economists follow a good practice in the episode and that the fruits of the research allow us to rethink and improve the way economists behave.

Keywords: social capital, economic methodology, economic growth

Classificação JEL: B22, B41, O11, O40, Z13

I. INTRODUCION

Around the turning of the 20th Century, an intense debate arouse upon the concept of "Social Capital", which has not ended in a consensus, despite the efforts of economists and sociologists. Empirical investigation on the impact of social capital on economic or social outcomes has also grown, without an agreed theoretical concept of the variable, since the debate, even when mentioned, was usually ignored. The consequence appears to be the existence of several papers discussing the effects of a vague social capital – usually measured with the same proxies. This lack of precision is said to undermine attempts to develop theoretical and empirical linkages with the variable (Durlauf, 2002).

Durlauf´s (2002) argument against the research in the field is that, since we do not know what social capital is, we do not know which are its determinants, which is necessary for producing reliable estimators, due to the impossibility of creating instruments. It is also impossible to assert that there is no correlation between the regressors and the error term. He discusses three important papers in the area and shows how the lack of a clear concept does not allow them to establish causality in the empirical work and doubts that even the partial correlations that were found are not unbiased.

But, as a 'meme'- a unit of cultural transmission (Dawkins, 2001, p. 214), it sticks to the mind of several researches, that, even conscious of the problems, accept the importance and the evidence regarding the effects of social capital, what makes the discussion of the concept still an important one.

Aware of the debate on the concept of social capital and after reading Durlauf (2002), we were curious to investigate how the economic literature has reacted to his critics: has it ignored the problem?, has the consensus been achieved? were new methods developed to deal with the empirical problems? More precisely, we cover the literature that studies the connection between economic growth (or income levels) and 'social capital' among regions (countries, estates, counties or regions), in the period 2002 (year of Durlauf´s publication) and 2010.

Interestingly, and without argumentation, there is a frequently used definition of 'social capital' in this literature: 'norms', 'trust' and 'networks'. We will argue that this pragmatic consensus was a legitimate and fruitful strategy of the researches, who managed to generate new linkages, new questions and encouraged both micro-studies on the subject and the investigation of causes and consequences of 'social capital'. The continuity of the research even allows us to return to the debate on the concept.

In section II, we review the literature focusing on the concept of social capital; in section III, our focus is on the econometric side; in section IV, we assess this literature.

II. THE CONCEPT: WHAT WAS ADDED AFTER KNACK & KEEFER (1997) & ZACK & KNACK (2001)

After the first wave of cross-country studies, the following papers were aiming to discuss the impact of social capital on economic growth at the country level: Knack (2003), Beugelsdijk et al (2004), Easterly et al (2006), Dinda (2007), Bjornskov (2006) and Neira et al (2008).

The link between regional growth and social capital has also deserved attention, as in Sabatini (2008), Rupasingha et al (2002), Beugelsdijk & van Schaik (2005), which dealt with regional growth in Italy, in the USA, and in the regions of Europe, respectively.

We want to observe which concepts of social capital were used in these papers and which arguments were used to sustain their choice.

In Knack (2003), there is no explicit mention to the word 'social capital', but since it aims to improve the work of Knack & Keefer (1997), sharing similar concerns, using similar proxies and similar econometric models, we find it interest to include it in our discussion. Knack (2003) tries to observe if the density of associations (Olson`s groups, Putnam `s groups, etc) affects economic growth. Although there is no discussion of the concept of social capital, we may infer that the underlying concept would be **networks** that encourage **collective action**, whose externalities may establish the relationship between the density of associations and economic growth, since the proxies are more appropriated for this concept.

Beugelsdijk et al (2004) has an empirical aim, which is to make a robustness analysis of the results of Knack & Keefer (1997) and Zak & Knack (2001), what will be discussed in section III. There is no discussion of the concept of social capital, although the authors are aware that Durlauf´s criticism assigns the flaws of the social capital literature to the unclear concept of social capital. We may infer that they assume the concept of social capital directly as **"trust**", since they work upon authors that assumes that social capital are "trust, norms and networks" that allows for collective action, choosing only to empirically test the first component of this definition.

Easterly et al (2006) try to discuss the impact of 'social cohesion' on economic growth, where 'social cohesion' is defined as 'the nature and extent of social and economic divisions within society' (Easterly et al, 2006, p.4). According to it, "social cohesion" would be a concept more useful for macro level analyses, while social capital would be a more appropriated concept for micro analyses. 'Social capital', on its turn, can affect 'social cohesion'. Consistently it agrees with the individual definition for 'social capital' as: 'resources inhering in relationships, networks, and other related forms of social connection' (Easterly et al, 2006, p.4).

There is no further explanation of why the micro approach is the best one for the use of 'social capital' and 'social cohesion' the best concept to be used into macro level analysis, except for the fact that there is a growing literature that discusses the concept in the former level. This argument is relevant, since it implies that the micro definition was able to support further research in the subject, but not enough to dismiss the role for the macro analysis.

They seem to try not to engage in the past debate about the concept of social capital focusing in another social variable. The problem is that the concept of **social cohesion** is equal to some of the

past definitions of social capital, although in the negative form: instead of 'norms and networks that enable collective action' it is, now, the **degree of fragmentation** and its impact on economic and social outcomes through **collective action**. It only throws to another variable the conceptual debate. An interesting issue was the focus only on actions that would have positive outcomes for society. Since they are concerned with similar macro phenomena (and since they use similar proxies), we keep this paper in our analysis of social capital.

Dinda (2007), after reviewing different concepts of social capital, does not try to compare these concepts. In a general statement, she says that

> 'Actually, social capital is a broad term containing the social norms and networks that generate shared understandings, trust and reciprocity, which underpin co-operation an collective action for mutual benefits that helps to improve efficiency of the society' Dinda (2007, p.2021-2022).

After, she restricts the concept to 'resources' used by individuals and, finally, she gives it a function as a productive factor. More precisely, human capital externalities are called social capital and introduced as an input in the production function, which is the concept that is used in a model that tries to explain the formation of social capital, the main aim of the paper.

The general definition of Dinda (2007) does not add to the debate about the concept of social capital, mixing again different categories in a vague way. It is just a statement that seems to situate the paper in the literature with which the author is dealing. The use of an individual approach to the definition is abrupt, since it does not follow immediately from the general definition, being one of the alternative concepts of "social capital" (as was developed by Sobel, 2002). It seems that mentioning the debate just serves as a bridge to define social capital as an input in the production function. But the definition of social capital as externalities from human capital is much more an attempt to explain the source (human capital) and the consequences (impact on production) of social capital, but not a definition for it.

An interesting approach was taken by Bjornskov (2006), who used principal component analysis (with cross-country data) to check if norms, networks, and trust could be considered as a single element comprising social capital. The results have shown that we should consider trust, norms and density of associations as 'multiple facets' of social capital.

Neira et al (2008) aim to discuss the concept of social capital and to estimate its impact on per capita income levels among European countries, in 1990. Their main idea is that social capital should be considered a factor of production, together with physical and human capital. Despite being a factor, it cannot alone improve production, in other words, it is necessary, but not sufficient to generate income.

They say that there is a debate about the concept but 'must definitions include terms such as, networks, trust, shared action, etc.' (Neira et al, 2008, p. 4). Some examples are given, but they are few and even their differences are not discussed (although showed). They state that the concept above

is well established and that the debate now would be about the possibility of using the term 'capital', what they think as legitimate.

Similarly to Dinda (2007), the debate seems to be a link to the main aim, which is also to legitimate the inclusion of the variable in the production function, although they are more aware of the necessity of discussing the issue. Another similarity with Dinda (2007) is that 'social capital' is presented in several levels of analysis. Firs it is 'an agglomeration of corporate, psychological, cultural, and institutional assets…that increase the amount (or the probability) of mutually beneficial or co-operative behavior for the people involved and for society in general' (p.6), and after it is defined as an asset (or aggregate asset), since it 'is a resource which may be the object of investment with the expectation of future profits and benefits' (Neira et al, 2008, p.6).

The text sometimes refers to social capital as something that belongs to the individual, as in the latter definition, but it also takes social capital or 'social climate' (p. 17) as something that changes the agent decision, since:

'(…)confidence in the relevant institutions and a healthy social climate contribute to growth via providing the economic systems in which they act with economic stability which, in turn, is reflected in the confidence shown by investors and their propensity to do so, access to credit, the size of the social network, consumer confidence,…' (Neira et al, 2008, p.17). We interpret the ambiguity as reflecting several steps of though: a) social capital is seem as an item of the environment, b) but it changes the action of the agent, trough a "relationship"; c) the asset itself is the relationship and its quality. Finally, d) and very important to the authors aim, it can be aggregated and included in a production function.

Rupasingha et al (2002) tests if social capital is related to economic growth in the counties of USA, making reference to the usual three components of social capital.

Sabatini (2008), after reviewing the polemic about the concept of social capital, states that 'networks of interpersonal relationships' are the '…more tangible – and measurable – expression…'(p.469) of social capital. The chosen concept, which is an element of the frequent definition: 'trust, norms and networks', is also considered as a cause of trust, and not a concept that would be in the same logical standard of trust. Sabatini (2008) also considers 'its multiple dimensions', which in the case are bonding, bridging and linking social capital. Principal Component Analysis is used to identify if empirical data from Italy can be associated with those types of social capital. All the empirical variables relate to kinds of connections among people, in accordance to the theoretical definition of social capital.

Beugelsdijk & van Schaik (2005) discuss the impact of density of associations in the economic growth of European regions. They test not only for global density of associations but also made the difference between Putnam and Olson groups.

It seems that the intense debate about the concept of social capital had no deep impact on its further work, even after Durlauf (2002) has related the econometric problems of this literature to the lack of a clear definition for social capital. When the revision of the debate is done by the authors, it only serves as an introduction, followed usually to the choice of the set "norms, trust, networks", without a clear justification for it. When there is justification for a choice, it is an operational one, as in

Sabatini (2008)[1]. Not even Bjornskov (2006), that tries to use an empirical strategy to define social capital, argues against the trio 'trust, norms and networks', since his aim is to identify these components.

The investigation upon the whole of social capital in economic growth after 2002 has, therefore, chosen to support the same concept used by Knack & Keefer (1997) and Zack & Knack (2001), and, doing so, it managed to give continuity to their line of research, either testing the robustness of the results, either asking the same question for other regional scales. If Knack & Keefer (1997) and Zack & Knack (2001) were to deserve some criticism, it would not to be due to their concept of social capital.

III. ECONOMETRIC CONTRIBUTIONS

This section aims to summarize the attempts to overcome the major problems of the Econometric Literature, specially the ones highlighted by Durlauf (2002).

We have found interesting econometric contributions in: Knack (2003), Beugelsdijk et al (2004), Bjornskov (2006) Beugelsdijk & von Schaik (2005) and Sabatini (2008).

Knack (2003) brings methodological improvements, but they are not related to Durlauf´s criticism. The paper expands the number of included countries and is more careful in the treatment of different waves of the WVS surveys. Economic growth is measured in a longer period: 1980-1999. OLS is used to estimate a cross-section analyze. Results do not support that groups have effects in economic growth.

Based on the answer in WVS, Knack (2003) constructs three proxies for density of associational activities: Group membership - including all selected items, Olson membership – including only items more related to the achievement of a common good, and Putnam membership, including items related to the defense of some groups.

It tests for the robustness of the results, using different samples – taking away countries of the former Soviet Union, excluding the index of quality of institutions and inflation from the econometric model, using only two or one waves. This former choice was to minimize reverse causation. Shortcomings are the small sample, endogeneity, omitted variables (since the right hand side was not justified).

Beugelsdijk et al (2003) is probably the best contribution in the econometric side, since it tried to conduct a deeper robustness analysis, using the Extreme Bound Analysis (Leamer, 1985), both in the strong version of Levine & Reneult (1992), and in the less demanding version of Sala-i-Martin (1997). The aim is to test for the robustness of trust as a determinant of economic growth in the same sample as Zack & Knack (2001).

[1] We must stress that in the case of Knack (2003) there is a clear justification for restricting the concern only to networks, since his aim was to discuss Olson´s hypothesis.

As fixed variables, they use the initial per capita income, average years of schooling, price of investment goods, all measured in 1970. Trust variable is obviously included.

The set of variables that will be permuted is collected in the economic growth literature, selecting the ones that are probably exogenous to trust. They selected 22 variables to the conditioning set, and use three in each specification. Six tests were conducted: T1) testing if all the coefficients of trust were of the same sign; T2) testing if at least 95% of the coefficients of trust were of the same sign; T3) testing it the coefficients were of the same sing and significant; and T4) testing if at least 95% of the coefficients were of the same sign and significant; T5) reports the results of the weak EBA test weighting it with log likelihood; T6) if the fraction of the cumulative function was above 5%.

The results for trust are that it is robust except when testing the strong version of the EBA test. They also report that in the Zack & Keefer (1997) sample, trust is only robust in the weak sign test.

After testing the robustness in terms of sign and significance, they questioned the robustness of the size of the trust coefficient. In their estimation, the coefficient of trust on economic growth is of 0.061, and is robust to the switching of variables.

The changing of the fixed variables does not alter the robustness of the results. Changing the size of the sample affects the results. Including countries one by one in order of their size on growth, upon Knack & Keefer´s sample, it is shown that both the size of the coefficient and the robustness of the significance and of the sign increases. They interpret this result as not supporting Durlauf´s criticism about the effect of omitted variables. The econometric problem, for them, is due to sample size. This result also implies heterogeneity of the parameters.

Beugelsdijk & van Schaik (2005) bring to the discussion the issue of spatial dependency and also use robustness analysis. For the latter, they used different methods to control for country –fixed effects: the direct one – including a dummy for each country, using quasi-fixed effect model (including the average value of the variable in the country) and estimating the equation with weighted least squares (the standard erros were adjusted for being to the same country). After that they change the period , change the composition of the Putnam group and also use recursive method.

Their conclusion is that only active membership is robust and that difference between Putnam´s and Olson´s group does not exist. It is important to remember that their sample is regions of Europe.

Neira et al (2008) try to deal with the econometric problems using a panel approach. They estimate a pooled-regression with fixed effects – which are jointly significant, having the (ln) o per capita income, in 1981, 1990, 1996 and 1999, as the dependent variable. The sample includes 14 developed countries. As independent variables they use trust (generalized trust in WVS), group (frequency of people there are active or inactive members of the associations listed in the WVS), rate of investment (KI) and human capital (PS2). They argue that the panel approach minimizes omitted variable problems. Due to multicolinearity issues, they either use TRUST or GROUPS and due to detection of heteroscedasticity, they estimate by generalized least squares. The results shown are the OLS and the fixed-effect ones and their generalized least squares counterparts. The strategies to deal with robustness are the usage of panel and of two proxies. Another argument was that their coefficient of TRUST is similar to the one found by Whitely (2000), for 34 countries also using the WVS (his

dependent variable is the growth rate of per capita GDP 1970-1992). The coefficients are (from the Pooled EGLS equation): 0,02 for KI, 0,01, for PS2 and 0,002 for trust or groups.

The main problems left behind are omitted variables, reverse causation, causality and endogeneity, since the dependent and independent variables are measured in the same years and there is no instrument. Despite the inclusion of fixed effects, there may be omitted variables that are not specific to each country, but that changes with time (as institutions and proximity to markets), which not only would be omitted but can be a cause of social capital. There may also be reverse causation.

Rupasingha et al (2002) changes the conditional set of variables to test for robustness, and trust remains significant. Most interesting, they estimate models correcting for spatial dependence and even in these ones the variable is significant, when analyzing counties of USA.

Sabatini (2008) and Bjornskov (2006) contribution was not related to testing the relationship among social capital and growth. They use PCA to decompose social capital in components.

We may conclude that the only answer to Durlauf´s criticism, in macro studies, was to test for the robustness of the results – changing specifications, methods of estimation, creating different proxies and using the EBA test. In this way, Beugelsdijk et al (2003) gave the most important contribution to establish that, at the country level, trust has a robust relationship with economic growth. They also argue reasonably that sample size and not omitted variables are the main drawback of the empirical work on the subject.

IV. ASSESSMENT

There is no excuse for a research line to avoid solving a conceptual problem, not it even can be said that, in this case, it did not matter for the econometric results. Instead of trying to solve the problem, economists decided to go on in their empirical research. This is especially disappointing for scientists that support a multidisciplinary approach, since several sciences were contributing to this debate, and a solution for it could have contributed to strength their relationship. It is even a possibility that the decline on the interesting in the area is related to this huge flaw in the literature, comparing to other candidates for being the determinants of per capita income as institutions and geography, although the usual distance imposed by Economy to other social sciences may explain better this minor interesting on the subject.

Despite the inexistence of further discussion about the concept, the authors do have cleared chosen one, which was the set: norms, networks and trust. We argue that this pragmatic approach was beneficial, allowing for further research on the area.

First of all, it was perfectly justified to raise the direct questions: does trust affect economic growth? Does density of association affect economic growth? These are interesting questions by themselves, as was done by Knack (2003). What this literature has in common is the curiosity to observe if, at the aggregate level, density of associations, networks and/or trust have impact on cross-country and regional economic growth. One can argue that this is so only due to the availability of

data on these items (the proxies are usually the same), but this does not erase the legitimacy of the question.

The question they raise is about the existence of social elements that are not institutionalized, in opposition to the ones discussed in the institutional literature, that affect economic development, when encouraging collective action.

Secondly, several channels were already established connecting this set of elements to economic growth, especially through a decrease in transaction costs, an increase in the flux of information, and through a decrease in the deviation of resources to the production sector. The identification of these theoretical channels justifies the interest of economists to investigate the subject.

As highlighted by Durlauf (2002), game theory has also established the importance of cooperation in economic outcomes.

Thirdly, not only there were macro evidence of partial correlations between social elements and economic growth, but also micro evidence was starting to grow. Due to the usual problems in the econometric literature (not only in the social capital area), economists do have a higher level of inertia in giving up a research line. Since there were clues encouraging further research, the decision of continuing the research was reasonable.

Hausman (1992) explains this inertia in terms of probabilities: considering the huge problems economists face in testing their models. Economic models have laws and *ceteris paribus* clauses (and simplifying assumptions). Economists, aware of the fragility of these auxiliary assumptions, impinge to them a smaller probability of being true, than they do for the basic laws. When inferences are not confirmed by data, economists follow the 'weak-link principle', '(W)when a false conclusion depends on a number of uncertain premises, attribute the mistake to the most uncertain of the premises' (Hausman, 1992, p. 207). Failure to confirm inferences will not easy provoke a change in the basic laws. The higher probability is that the blame should be given to the auxiliary assumption and *ceteris paribus* clauses. Hausman (1992) asserts that this does not mean that the laws will never be changed, although dogmatism is a permanent danger. For giving up a project, economists need a good deal more of negative evidence. Even accepting the falsity of a law, if the costs of changing the model are higher then the benefits of making the change, it still may be rational too keep the basic model.

This pragmatic choice of the concept has had some interesting consequences. First, it allowed the empirical research to continue, what could at least give more empirical evidence to enrich the debate. Robustness tests have reinforced confidence in the partial correlations. Secondly, there were some novelties related to the concept itself: a) the attempt to understand more about the similitudes or not of the units of the concept, as illustrated by Bjornskov (2006), who concludes that networks, trust and norms are different entities; b) an attempt to test for causalities among these units, that can be illustrated by Knack (2003), that do not find a relationship between networks and trust; c) the attempt to better understand the nature of these concepts, using usually PCA technique. Thirdly, the literature has continued, encouraging the search for micro evidence, the development of economic models, the search for causes and consequences of social capital, and, more recently, questioning if social capital does not reflect institutions.

Returning to the debate about the concept of social capital, we could, backwards, discuss the underling concept of social capital used by this literature: trust, networks and norms. Is this definition a good one for social capital? Or we could invert the question: is Social Capital a good definition for the set of these elements?

Two issues arise before trying to give an answer to these questions: a) are trust, norms and networks a unique entity; b) do we need that social capital lead to cooperation or trust or collective action or welfare?

We already know that some of the empirical findings do not support the idea that trust, norms and networks are a singular category: not only they correlate differently in the PCAs, but also they have different relationships with at least the per capita income growth variable.

Although we cannot integrate those elements in a unique one, they are categories that have communalities, at least when we consider authors that deal with economic growth: they help the collective action and cooperation and they are not formal institutionalized. For the second issue, we observed that the outcome, although usually is considered a "good" one, does not need to improve welfare for the whole society.

The other characteristic is that the role of the social elements is to be a framework in which individuals act. Trust, norms and networks can be thought as altering the utility function of individuals and the production function of firms. A society with higher trust and communal life (networks) may have higher probability of having social welfare as an argument of their individuals utility functions (and/or give more weight to this argument). In the case of Olson´s groups, the argument would be restricted to be the welfare of a minor group. Credit constraints should be relaxed because risk parameters are changed for the credit suppliers. What we want to stress is that, in a similar way that institutions are viewed in the literature, social elements change the framework of decision (functional arguments and parameters), what will create changes in the endogenous variables. This approach is different to the micro approach for "social capital", which is thought as an active or resources of the individual itself. In this micro approach, theses resources may relax constraints to his decision or increase his probabilities of success. In the macro approach, on its turn, the elements do not belong to the individual. They are external to him and shape his decision and they may even relax somebody else´s decision, but not the individuals one.

Following this argument, we do not agree with Sobel (2002) that the micro approach in the only one that is legitimate from the economic point of view. Both can be included in the economic models, although having different roles. The illegitimacy of the macro approach can be seen as one example of Hausman (1992) critics about the "separate" science of economics.

Social capital as norms, networks and trust, in this literature, is totally in agreement with Coleman´s definition:

> 'Social capital is defined by its function. It is not a single entity, but a variety of different entities, with two elements in common: they all consist in some aspect of social structures, and they facilitate certain actions of actors within the structure' (Coleman, 1988, p S98).

The already established theoretical linkages between norms, networks and trust and economic outcomes are enough to justify their study as a separate subfield of research in economic growth. They can also be included in theoretical models as parameters of their basic functions. This picture justifies the choice of the concept. The fact that the concept is a sum of itens is not, for us, a strong argument, since we have other fruitful areas of research with similar broader definitions, as institutions and even geography (nature, proximity to markets?).

We need now to discuss the word "social capital".

We agree with Sobel (2002) that there are elements to support the expression "social capital": our set can be increased by human action, it can depreciate. On the other hand, a capital is an input to the production function, and, as exposed before, this is not the role discussed in the macroeconomic literature to trust, norms and networks. Therefore, we disagree with the usage of the expression. In the lack of any other, Easterly et al (2006) one seems reasonable: social cohesion.

It is interesting to observe that if Caldwell´s (1991, 1994) prescription of adoption "situational logic"[2] for recovering the practice of Economics is interesting, we should realize that research on "social capital", in its macroeconomic approach, enriches the description of the situation of the choice by the agent, as we argued before (since it changes the parameters that affects choice). It is important, however, to highlight that the legitimacy of a science in using "situational logic" does not imply that it is progressive, as Caldwell (1991, 1994) makes it clear.

This is particularly interesting since Caldwell (1994) see as 'merits' of this method the usage of 'folk psychological categories'(both quotations in Caldwell´s, 1994, p. 143), which are easy for making the problem understandable (in oppositional of too much abstraction and formalization); and the fact that this characteristic (and the usage of the same method in other social sciences) easier the contact with other sciences. This view may weaken the assessment that the lack of a deeper definition of social capital has necessarily undermined an interdisciplinary approach in this literature.

On the empirical side, efforts were done to investigate if social capital has several dimensions and if there is a robust relationship between it and economic growth, with a reasonable result. Interestingly, at the country level, only trust has correlation with economic growth, while at finer divisions, density of associations shows robust relationship with economic growth.

Although we may agree with the concept, although links among social capital and economic growth have been established, what we can accept, in the empirical work, is the robustness of the partial correlation at the macro level. Causality issues are very far from being solved, especially since we are still unsure about what determines social capital and due to the lack of good structural models that could guide the econometric work.

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[2] Popper considers "Situational Logic", accordingly to Caldwell (1004), a method used by social sciences, that consists in describing the situation of an agent, and uses the rationality principle to infer which are the agents choice.

We believe that the goals of macroeconomic empirical work should be reviewed, following Caldwell´s (1994) attitude of being an "epistemic pessimist" (Caldwell, 1994, p. 147), which is a methodological approach that does not try to solve the empirical issues that our science faces advising economists that "they should try harder" (Caldwell, 1994, p. 139), since

> '…no matter how advanced the econometric techniques and how intricate and detailed the data sets become, few robust relationships will emerge. There will always be variables that cannot be measured that will allow one rationally to question a finding, and there will always be studies that reach different conclusions when alternative plausible variables are included in a regression.' (Caldwell, 1994, p. 147)

In the case of economics, it is hard to be sure of the completeness of our theoretical model, which causes the same suspicion in the empirical one. Concretely, omitted variable is always an issue, as it is establishing causality and measurement problems. The Popperian approach and Hausman´s (1992) prescription for the economist is to recognize these problems, but to try to develop better methods, better data, looking forward to overcome the obstacles. Even if this is not feasible, this should be the aim.

On the other hand, Caldwell (1994) does not see this approach as rich, since, for him, all the good econometric work that has been done still does not led us to met the goals of a science, which is 'a better understanding of economic phenomena' (Caldwell, 1994, p. 143) They did not improve our knowledge of Economics substantially. He asks for us to redefine our goals, and especially to identify our limits.

We want to add that 'trying harder' has created a social pressure among economists that face the fear of not publishing if they are not at the frontier of the econometric techniques. At this moment, the academic life seems biased not to the producing of sophisticated theoretical models, but to the empirical side of the papers.

The institutional incentives and our data problems are encouraging, in our opinion, too much usage of our time in these activities, usually with a lower quality, since the frontier of the techniques is difficult to reach, and either the researcher uses the method without solid knowledge of it or he, even if not an econometrician, takes less care of the theoretical discussion and of the literature review.

In the case of macroeconomics, and not only in the case of the social capital literature, to rethink our goals as individuals and as a society is crucial. I would not say that there is no space for trying to solve our usual problems, but division of labour should be more used and the average expectation of this kind of work should not be the target.

But since the macroeconomic field is so full of problems, why should not us stay limited to micro research? The answers are basic, but still reasonable: we do not have enough data for using microdata in cross-country comparisons, and we doubt the effort to develop this kind of dataset is out of the reach of our generation (and may have so much measurement problems that may not be useful); the estimation of macro data allow us to identify externalities; the estimations are useful for calibration. Also, despite the better techniques of treatment for micro data, it still carries the problems of social sciences and we will end up always 'trying harder'.

Aggregation, despite all of its problems, has been providing several inferences about why countries or regions are different, which is one of the main questions of the area. Aggregate comparisons have some simple good quality: simplicity, which helps to raise questions for the first time.

With macro data, first of all we should emphasize descriptive statistics, which help us to establish possible correlations and to characterize our object of study.

Exercises trying to establish robustness, especially through changing proxies, changing model specification, observing the behaviour of outliers, EBA tests and similar ones are also welcome and feasible. Their results may encourage further results, especially at the micro level, where it may me more promising to establish causality. Maybe these are the limits of the contribution for macro analyses, but they seem to be important.

Calibration also helps to have clues, while, and for us more interestingly, history and comparative history should be more used.

Just to finalize, going deeper in the analysis of robustness was one of the features of the social capital empirical literature, and, based on what was discussed above, it seems worthwhile and feasible to proceed with this kind of research.

V. CONCLUSION

The economic research, at the macro level, about social capital has not taken too much in account, directly, Durlauf´s (2002) criticism. On the theoretical side, there was some hidden improvement, since in practice a concept has been chosen: norms, trust and networks – elements that change individuals behaviour in the direction of collective action.

On the empirical side, causality could not and probably will not be established. Attempts to find robustness was the main contribution of the literature.

We argued that in both sides this was a good way forward, helping to increase the confidence in the importance of social capital, which encouraged further work. We do not expect that macroeconomic research in economic growth will manage to establish causality, and we think it should not seek this aim.

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